



2838 Washington Street
Avondale Estates, Georgia 30002
Phone: 404.600.2300
Fax: 404.228.5220
www.wolfrailway.com

September 7, 2017

Mr. John Millberg
Millberg Gordon Stewart PLLC
110 Haynes Street
Suite 104
Raleigh, North Carolina 27604

Re: Murray v South Carolina Central Railroad

Dear Mr. Millberg:

In my capacity as the President of Wolf Railway Consulting, LLC (WRC) I have investigated issues regarding the accident in the present matter. As part of my duties at WRC, I frequently perform investigations including the collection and analysis of locomotive event recorder data. In addition, I have over 40 years of experience investigating train accidents.

The following materials have been reviewed in preparation of this preliminary report:

Materials Reviewed:

1. Accident Diagram
2. Handwritten Statement of James Powell
3. Handwritten Statement of Jamie Cooke
4. Supplemental Statement of Walter Murray
5. Portions of Laws, Rules and Regulations
6. Locomotive Inspection Reports
7. Murray Cell Phone Records
8. Job Assignments
9. Photographs
10. Event Recorder Data – Unit 506/2033
11. Deposition Transcript of Jacob Powell
12. Deposition Transcript of Walter Murray
13. Deposition Transcript of Mike Rogers
14. Deposition Transcript of Daniel Wilhelm
15. Investigative Hearing Transcript

16. Unusual Occurrence Report
17. Initial Rail Equipment Accident/Incident Record
18. Rail Equipment Accident/Incident Report
19. GCOR
20. CSX Operating Rules
21. G&W Air Brake and Train Handling Rules
22. G&W Transportation Safety Rules & Procedures
23. CSX LDVR
24. Complaint

Facts and Opinions Developed:

1. At approximately 2:45 AM on April 23, 2015, near Florence, South Carolina, South Carolina Central Railroad (SCCRR) train SCTFYFL collided with CSX train I49423 at the southern crossover on the yard lead within the CSX Florence Yard at approximate railroad milepost 292.9. Two locomotives on the SCTFYFL train and four railcars on the I49423 train derailed as a result of the collision. Engineer Walter Murray was allegedly injured as a result of the incident. It was dark and clear at the time of the incident.
2. The SCTFYFL train consisted of two engines, locomotive SCRF 2033 was the lead unit and SCRF 2032 was trailing, along with 10 railcars, at the time of the incident. The SCTFYFL train was being operated by Engineer Murray. Conductors Jacob Powell and Jamie Cooke were the other members of the crew. This crew was performing the nighttime "Florence Turn" job. At the time of the incident, Engineer Murray was positioned inside the cab of SCRF 2033, and Conductors Powell and Cooke were positioned at the bridge switch.
3. The SCTFYFL crew had previously coupled the two locomotives with 10 railcars in the yard #7 track. Testimony from South Carolina Central Railroad Trainmaster Michael Rogers, and Conductors Powell and Cooke reveals that the CSX Yardmaster gave instructions to the SCTFYFL crew to pull railcars out of the #7 track, then stop short of the crossover because another train was coming through. Conductor Cooke testified that he responded to the CSX Trainmaster by repeating the instructions (Investigation p. 177). Conductor Powell testified that another message relayed via radio directly to Engineer Murray, who was in the cab of locomotive SCRF 2033, was to be prepared to stop at track #25, short of the crossover (Powell depo. p. 129). During the investigation hearing, both Conductors Powell and Cooke stated that the SCRF radio channel is used at all times for radio transmissions. During his deposition, Engineer Murray testified that his radio was "tuned" to the SCRF radio channel "the whole time" (Murray depo. p. 90) where all three of these transmissions were made. Therefore, Engineer Murray was audience to three radio transmissions detailing the work to be performed, including stopping short of the crossover. Likewise, the South Carolina Central Railroad Unusual Occurrence Report, as well as the DOT Rail Equipment Accident/Incident Report, state that the SCTFYFL crew was instructed to stop in the clear of a CSX train departing through the south end

crossover. After the coupling was complete, Conductors Powell and Cooke proceeded in the truck toward the bridge to line the switch for their eventual exit from Florence Yard, and to get out of the way of the moving equipment (Powell depo. p. 142). Trainmaster Rogers testified that it is not normal practice to man the crossover to see if traffic is coming (Rogers depo. ps. 217-218).

Video from another CSX locomotive positioned in the Florence Yard on the night of the incident shows that the I49423 train was occupying the crossover for at least 10 minutes prior to impact. Event recorder data from locomotive SCRF 2033 shows that train SCTFYFL traveled toward the crossover, from track #7 for approximately five minutes, leading up to impact. Therefore, one can deduce that the CSX train was already occupying the crossover prior to SCTFYFL's departing track #7 and Engineer Murray's eventual arrival at the point of impact.

4. Engineer Murray admitted in his typed statement (dated May 27, 2015, approximately five weeks after the incident) that he "dozed off" while the train traveled down the ladder toward the crossover. Likewise, during his deposition Engineer Murray stated that he went to sleep and dozed off after pulling out of track #7 (Murray depo. p. 125). In his statement, Engineer Murray claims that he was never notified by his crew or the CSX Yardmaster of train traffic ahead at the crossover. Subsequently, the SCTFYFL collided with the side of train I49423 derailing SCRF 2033, SCRF 2022 on the SCTFYFL train and railcars BPRX 206630, BPRX 206315, BPRX 5410 and BPRX 206603 on the I49423 train.
5. At the time of the incident, Engineer Murray had approximately 10 years of total railroad experience with South Carolina Central Railroad. He testified that he had worked the Florence Turn job regularly for the previous 7 months, after first working that job approximately three years prior (Murray depo. p. 77-78). Engineer Murray was certainly well aware of the rules governing his work and the necessity to remain alert and attentive while working in the Florence Yard.
6. Event recorder data retrieved from lead locomotive SCRF 2033 does not provide any speed or distance data in the respective channels. However, I do not take issue with these omissions. Event recorders record data on multiple channels from different sources. These sources include sensors that pick up information such as air pressure, electrical voltages and currents, and an electrical pulse signal from an axle alternator. These sensors provide input to the event recorder system that stores the data in memory. In my experience (40+ years) of working with event recorders, it is not uncommon for one of the multiple sensors to fail and not provide data to the event recorder. That does not mean that the event recorder is defective; it only means that one, or more, of the input signals may be missing. Even though the distance and speed channels were missing in this case, the data provided for other channels is credible and should not in any way be considered corrupt or inaccurate. Furthermore, 49 CFR § 229.135 – Event recorders states, in part, that only "a train operated faster than 30 miles per hour shall have an in-service event recorder." Trainmaster Rogers testified that the SCRF locomotives

do not operate at speeds over 25 MPH (Rogers depo. p. 70). Therefore, any issue of sporadic data retrieved from the SCRF 2033 is moot. That being said, in analyzing the data that was recorded, I was able to determine the point of impact as well as the movement leading up to the collision that is the subject of this matter. I find all the data recorded on the event recorder is consistent with testimony in this case and the movements being made, including the timing of events.

7. On the night of the incident, Engineer Murray failed to follow applicable rules and regulations, failed to remain alert and attentive, and failed to perform his duties properly. His own actions and failures led to the incident and his alleged injuries.
8. Engineer Murray claims that Trainmaster Rogers called him while he was off duty and woke him from sleep. Engineer Murray alleges that this phone call (at 3:42 PM on April 22, 2015) was a direct violation of the Hours of Service Act (HOS) which is outlined in 49 CFR § 228 and provides employees who have worked “a full twelve consecutive hours, . . . at least ten consecutive hours off duty before being permitted to return to work.” Records indicate that Engineer Murray’s previous shift began at 2200 (10:00 PM) on April 21, 2015, and ended at 0600 (6:00 AM) on April 22, 2015; therefore, showing Engineer Murray worked approximately eight consecutive hours. Engineer Murray’s cell phone records show that he received a phone call from Trainmaster Rogers at 3:42 PM on April 22, 2015. While this call was indeed placed 18 minutes prior to Engineer Murray’s ten consecutive off duty hours expiration (as Trainmaster Rogers admitted to in his deposition (Rogers depo. p. 80)) the call itself was not the violation. In fact, **GCOR – 1.17 Hours of Service Law** explains that:

If an employee is called to report for duty before legal off-duty time has expired, before accepting the call to work, the employee must notify the individual making the call that off duty time has not expired.

Engineer Murray violated this GCOR requirement regarding HOS by not informing Trainmaster Rogers that his off duty time was still in effect when the telephone call was received. During the investigation hearing, Engineer Murray admitted he did not say anything to Trainmaster Rogers (Investigation p. 208). Furthermore, Engineer Murray reported for work admittedly “groggy and fatigued” (Investigation p. 239) and dozed off on the job multiple times; yet, never mentioned the HOS interruption to his fellow crew members or any other railroad personnel (Investigation p. 212). Engineer Murray testified during his deposition that if Trainmaster Rogers had called him “18 minutes later that this train wreck would not have happened” (Murray depo. p. 61). I find this statement highly speculative. Engineer Murray should have complied with the above-referenced regulations and he would have been afforded an additional 10 hours of rest per the rules (Rogers depo. p. 89).

9. **GCOR 1.1 – General Responsibilities, Safety** states, in part:

Safety is the most important element in performing duties. Obeying the rules is essential to job safety and continued employment.

1.1.1 – Maintaining a Safe Course

In case of doubt or uncertainty, take the safe course.

1.1.2 – Alert and Attentive

Employees must be careful to prevent injuring themselves or others. They must be alert and attentive when performing their duties and plan their work to avoid injury.

Similarly, **GCOR 1.6 – Conduct** mandates that employees must not be:

1. Careless of the safety of themselves or others.

Similarly, **Genesee & Wyoming Transportation Safety Rules & Procedures, Employee Responsibilities 1000** states:

You must use care to prevent injury to yourself or others. You must be alert and attentive at all times when performing your duties and plan your work to avoid injury.

Engineer Murray violated these rules which are designed so that employees will know that safety is of the utmost importance. Engineer Murray wrote in his statement and testified that he was fatigued and tired on the day of the incident (Murray depo. ps. 68-69); yet, he failed to take the safe course when he chose to work in his condition. As previously mentioned, Engineer Murray testified that he did not inform the trainmaster or his crew members about his tired state, and was careless with his safety and that of his coworkers. Engineer Murray testified that he dozed off and therefore was unable to be alert and attentive as required. Engineer Murray's actions on the night of the incident violated the safety rules mentioned above.

10. **GCOR 1.11 Sleeping** states, in part:

Employees must not sleep while on duty . . . Employees reclined with their eyes closed will be in violation of this rule.

Similarly, **Genesee & Wyoming Transportation Safety Rules & Procedures, Conduct 1101** states, in part:

It is essential to safety that you give your undivided attention to your work; therefore, you must not,

(a) Sleep or assume the attitude of sleep

Sleeping on the job is frowned upon in most areas of work, and the railroad is no exception. Sleeping while operating a multi-ton locomotive pulling another unit and ten railcars, could be catastrophic. As an experienced engineer, Engineer Murray certainly was aware of the importance of being alert while operating a train. Engineer Murray testified that he fell asleep in the locomotive multiple times while on duty in the early morning of April 23, 2015. This action was a direct violation of the above-referenced GCOR and G&W rules and extremely dangerous.

11. As previously mentioned, on the night of the incident, the CSX Yardmaster gave instructions to the SCTFYFL crew to pull railcars out of the #7 track, then stop short of the crossover because another train was coming through. **GCOR 1.46 – Duties of Yardmasters** states, in part:

At locations where yardmasters are on duty, employees in train, engine, and yard service must comply with the yardmaster's instructions.

Engineer Murray failed to comply with the CSX Yardmaster's instructions to remain clear of the crossover. Conductor Cooke relayed the movements to Engineer Murray and he began to pull the train out of track #7. There was no requirement for Engineer Murray to repeat the commands as **GCOR 2.3 – Repetition** states, in part:

An employee who receives a transmission must repeat it to the person transmitting the message, except when the communication:
- Concerns yard switching operations

And similarly, **CSX Operating Rule – 1008.2 – Receiving, Acting Upon, and Ending Radio Transmissions** states, in part:

Promptly acknowledge radio transmissions by using positive identification unless doing so would interfere with safety. Repeat the transmission, except when it:
a. Relates to yard switching operations

It is reasonable for Conductors Powell and Cooke to assume Engineer Murray was following the last radio command, as he complied by pulling forward with the new cut of cars out of track #7. Engineer Murray had a duty to comply with the yardmaster's instructions and was obligated to contact the crew if he was unsure of the appropriate next move.

12. GCOR 1.20 – Alert to Train Movement states, in part:

Employees must expect the movement of trains, engines, cars, or other movable equipment at any time, on any track, and in either direction.

Engineer Murray claims that he was unaware of the CSX train departing the southern crossover on the night of the incident, although instructions that had previously been given stated such. Nonetheless, as an experienced railroad employee, Engineer Murray was aware of the potential for train movement at any time. Engineer Murray testified that he did not remain alert and attentive to his surroundings and instead dozed off while operating the train. His actions violated the above-referenced GCOR rule.

13. GCOR 6.28 – Movement on Other than Main Track states, in part:

Except when moving on a main track or on a track where a block system is in effect, trains or engines must move at a speed that allows them to stop within half the range of vision short of:

- Train
- Engine
- Railroad car

DOT Rail Equipment Accident/Incident Report estimates that SCTFYFL train was traveling at approximately 7 MPH at the time of the incident. DOT Initial Rail Equipment Accident/Incident Record states that the I49423 train was traveling at a recorded 4 MPH at the time of the incident. Video from another CSX locomotive positioned in Florence Yard at the time of the incident confirms these speeds. Engineer Murray claims in his statement that he fell asleep and awoke approximately three seconds prior to impact with the departing CSX train. That being said, it is evident by the collision that Engineer Murray was not traveling at a speed that allowed him to stop in half the range of vision short of the CSX train. As such, Engineer Murray violated the above GCOR regulation in place at the time of the incident.

14. Engineer Murray claims that the state of the alerters on the South Carolina Central locomotives was causative in the incident. G&W Manager of Maintenance Daniel Wilhelm testified that he removed the Wi-Tronix system from the SCRF 2032 and SCRF 2033 locomotives per instruction from G&W vice president of mechanical, Jim Wineland (Wilhelm depo. ps. 24-25). By doing so, the alerter system was removed, though some of the components physically remained on the engines, including a portion that was used for the speedometer (Rogers depo. p. 227). 49 CFR § 229.140 Alerters outlines the locomotives that must be equipped with alerters, and makes exceptions for locomotives that operate at speeds of 25 MPH or less. Trainmaster Rogers explained during the investigation hearing that the SCRF 2032 and SCRF 2033 are two such locomotives that do not require

alerter, because they are not operated over 25 MPH (Investigation ps. 69-70). I take no exception to the removal of alerter on these locomotives as the removal was not in violation of any federal statute or regulation.

Even if the alerter system was in place and operating at the time of the incident, the system was designed to go off every 96 seconds (given the maximum track speed for the SCRF locomotives of 25 MPH) if a throttle position had not changed (Rogers depo. p. 238). Event recorder analysis indicates that the SCTFYFL train impacted the CSX I49423 train at approximate time stamp 02:46:18.9. Engineer Murray made the last throttle change at approximate time stamp 02:45:00. Therefore, there were approximately 78.9 seconds that transpired between Engineer Murray's last throttle change and the collision. An installed and functioning alerter would not have sounded during this timeframe. Any claim by Engineer Murray that an alerter would have altered the outcome of this incident is without merit.

It should be noted that at his deposition, Engineer Murray provided three Locomotive Inspection Reports (two for SCRF 2033 and one for SCRF 2032), dated January 13 and February 2, 2015, in his handwriting claiming that the alerter were not functioning on the locomotives. These reports had never been seen by anyone within the railroad prior to the date of his deposition, and Engineer Murray failed to provide them at the investigation hearing for the incident. Furthermore, Manager of Maintenance Wilhelm testified that the maintenance department never got those reports (Wilhelm depo. p. 30). To Wilhelm's credit, none of the reports have a signature from anyone at G&W showing receipt or response regarding the alleged listed defects. Nonetheless, if Engineer Murray truly believed the alerter system was not functioning properly, then it stands to reason that he would have continued to inspect the system after February 2015 (every day up until the day of the collision) per **GCOR 1.1.4 – Condition of Equipment and Tools**. This rule states:

Employees must check the condition of equipment and tools they use to perform their duties. Employees must not use defective equipment or tools until they are safe to use. Employees must report any defects to the proper authority.

Either Engineer Murray failed to comply with the requirement to inspect his equipment, or he failed to promptly provide a written report of a determined defect, or there was no defect to report at all.

If Engineer Murray withheld additional defect reports, then he was in direct violation of **GCOR – 1.2.7 – Furnishing Information** which states:

Employees must not withhold information, or fail to give all the facts to those authorized to receive information regarding unusual events, accidents, personal injuries, or rule violations

It is apparent that the internal workings of the alerter system were removed and all that remained was the shell. This does not mean that the locomotive had a malfunctioning alerter. In fact, although there was a shell, the locomotives were not equipped with alerters. Conductor Powell testified that Trainmaster Rogers notified him that the alerters had been removed from the locomotives in September or October of 2014 (Powell depo. p. 183). Conductor Powell testified that it was common knowledge for everyone who worked for South Carolina Central Railroad that the alerters had been removed from the engines (Powell depo. ps. 200-201).

15. Engineer Murray takes issue with the fact that two South Carolina Central employees were allowed to ride in the truck and neither was placed on the locomotive with him or outside, standing at the crossover. It is not certain and is speculative that a radio call from a person positioned at the switch would have awakened Engineer Murray, given the other loud sounds in a moving locomotive. Furthermore, Engineer Murray should have obeyed **G&W Transportation Safety Rules & Procedures Employee Responsibilities 1004** which states:

You must protect your own safety. You must not rely on the watchfulness of others, when you have the ability to protect yourself.

Engineer Murray conveniently ignores the fact that he fell asleep on the job on multiple occasions while operating a locomotive. He endangered himself, his coworkers and the railroad property.

16. This was a preventable incident. Engineer Murray could have prevented this incident and his alleged injuries. Engineer Murray's failure to adhere to federal, G&W, and CSX rules and his disregard for his personal safety and that of his coworkers are the causes of this incident and his alleged injuries. No exception is taken to the equipment, or the other crew members' actions on the night of the incident. Engineer Murray failed to notify his employer before committing an HOS violation, and caused this incident because he failed to remain alert and attentive by sleeping on the job and running his train into the side of the plainly visible CSX train.

The opinions expressed are based on my background and experience, and the materials provided. These opinions are preliminary as to the date of this report. Should additional materials be made available, I reserve the right to amend or supplement this report.

Submitted by:



Gary P. Wolf